

Appendix E

Summary of Sea Scallop Density Data for the Port Ambrose Area

Environmental Report

in support of the

Port Ambrose Project Application

July 2015

Topic Report 4 – Biological Resources

Addendum – Summary of Sea Scallop Density Data for the Port Ambrose Area

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Summary of Sea Scallop (*Placopecten magellanicus*) Density Data for the Port Ambrose Area

The proposed Port Ambrose Deepwater Port is located approximately 19 miles offshore of Long Beach, New York in the Mid-Atlantic Bight (Bight) in water depths of approximately 100 feet (ft) (Figure 1). The marine habitats within the Bight have been extensively studied and widely reported by several sources. Liberty Natural Gas LLC (Liberty) has conducted several years of site specific environmental studies in order to develop an understanding of the existing conditions at the proposed Port site and related subsea pipeline that delivers natural gas to a connection point offshore of Long Island. During discussions between Liberty and sea scallop fishermen in the area, it was questioned whether the Port area constituted commercially viable fishing grounds. What follows is a summary of the known information of sea scallop densities in the Port area.

Sea Scallop Habitat and Commercial Fishing Density

The Atlantic sea scallop occurs on the continental shelf of the Northwest Atlantic from the north shore of the Gulf of St. Lawrence south to Cape Hatteras, North Carolina (Hart and Shute 2004). In general, adult sea scallops are found at depths ranging from 59-361 ft or 18-110 meters (m), but in the Mid-Atlantic Bight (Long Island to Cape Hatteras) scallops occur mostly between 131-230 ft (40-70 m) with the highest densities found near Hudson Canyon and off of Delaware Bay (Hart and Shute 2004). In order to be commercially viable, an area would require a density of one scallop per four square meters and/or several hundred scallops collected during a 15 minute survey tow.

Site Specific Sea Scallop Data Obtained by Liberty

Underwater video transects along the Mainline and Port areas were taken using an ROV with an HD video camera in June 2012. Four transects were recorded in the Port area, each 3,600 ft (1,097 m) in length (Figure 1). No scallops were observed along the Mainline. In the Port area, scallop sightings ranged from rare to common. As reported, the only transect in which scallops were noted as common was the ROV transect A-A¹ through Buoy 1 (Figure 1; Liberty Natural Gas LLC 2012a). Scallops were more commonly observed as the ROV progressed further south.

This same video segment was reviewed to ascertain a count of the scallops present. A total of 65 live and 15 dead scallops (clappers) were counted during the video. Because the viewable area of the ROV camera was approximately 3 ft (0.9 m) wide and the ROV covered approximately 3,600 ft (1,097 m), this number represents a total area of 10,800 ft² (1,003 m²) or an estimated density of one scallop per 0.86 ft² (or one scallop per 0.08 m²). Observations of only a few scallops were made at Transects B – B¹ and D – D¹, and scallops were rarely observed along Transect C – C¹. Based on this information, the Port area would not be a commercially viable area for sea scallops. However, Liberty understands the limitations of the study both spatially and temporally; and was informed by the commercial fishermen that an

industry-funded and publically available database and associated reports are available from NOAA (Resource Survey Reports [RSR]) which contain scallop densities within the commercially fished areas of the Northwest Atlantic.

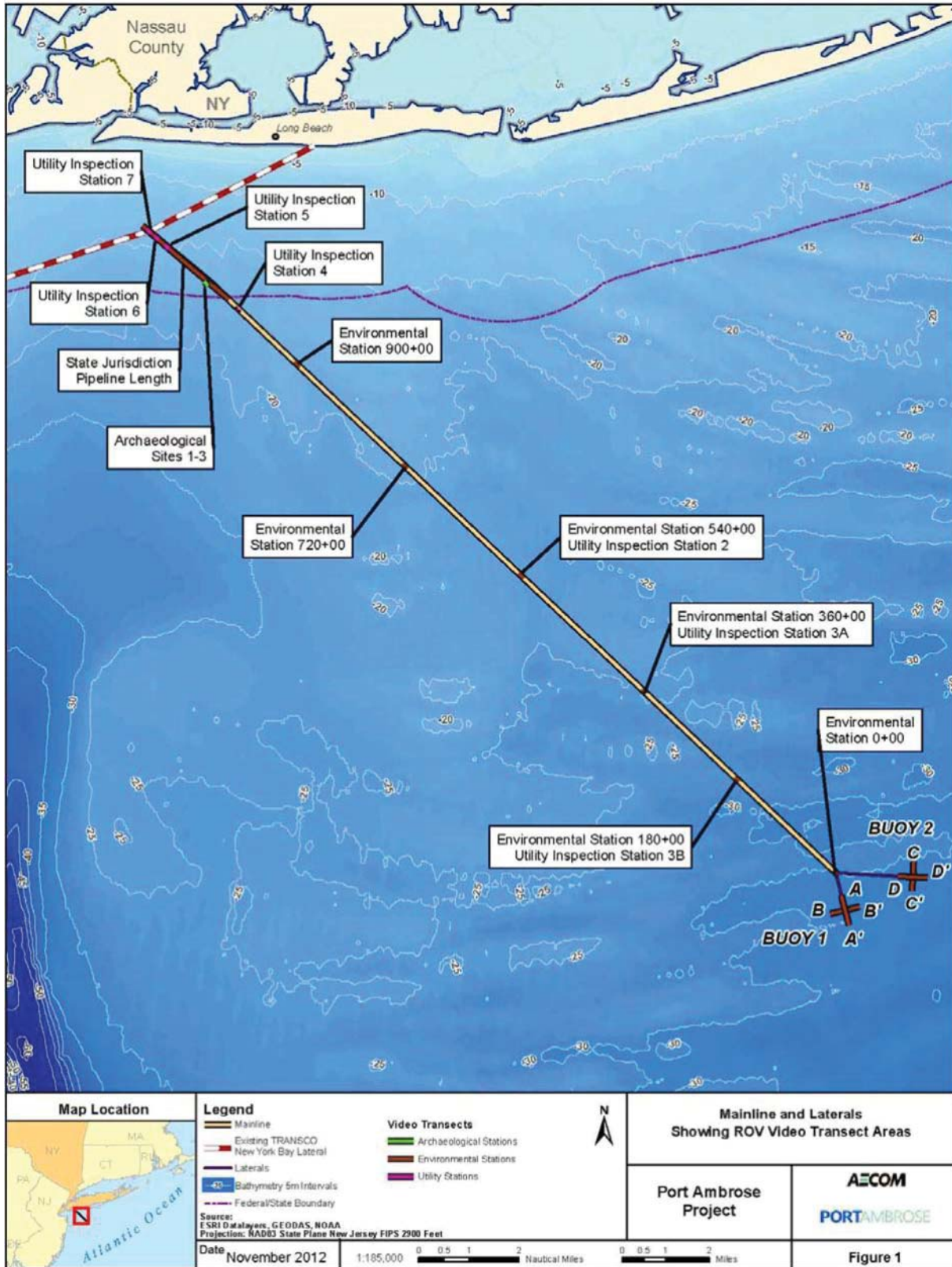


Figure 1. Offshore Mainline Route and Port Area showing video transect areas obtained by ROV June 2012. (Source: Liberty Natural Gas LLC 2012a)

Results of the National Oceanic and Atmospheric Administration (NOAA) / Northeast Fisheries Science Center (NEFSC) Sea Scallop RSRs

The methodology used by NOAA/NEFSC to collect sea scallops was 15-minute tows using a modified 8-foot New Bedford type scallop dredge at randomly chosen stations (NOAA / NEFSC 2011). Figure 2 shows the tow station locations of the study conducted in the Bight nearest to the Port from 2008 - 2011. Table 1 shows the number of scallops in each tow for the stations closest in proximity to the Port area for the years 2008 – 2011 as well as the calculated density per square meter.

At the request of Liberty, NEFSC gathered recent RSR data for stations close to the coordinates of the two Port buoy locations. In response to the data request, NOAA/NEFSC responded that the most recent RSR data (2014) indicated that of the three 15-minute tows that had been performed within three miles of the Port, the tows yielded 10, 3 and 0 sea scallops (D. Hart, June 15, 2015: personal communication). This is less than the several hundreds of individuals needed (per tow) in order for this area to be considered a commercially viable scallop fishing area, and the depth at the Port area was considered a little too shallow for sea scallops, which do not appear in significant numbers in water depths less than 115 ft. (35 m) (D. Hart, June 15, 2015; personal communication).

Hart and Shute (2004) graphically summarized the results of the NEFSC scallop surveys in two figures, the first showing numbers of scallops per tow collected during surveys from 1979 – 1993 (Figure 3), and the second showing numbers of scallops per tow collected during surveys from 1994 – 2003 (Figure 4). Both figures indicate that the commercially viable densities of sea scallops are found further south of the proposed Port site in deeper water; and scallop abundance near the proposed Port site is the lowest recorded range of the surveys (n=1-200) .

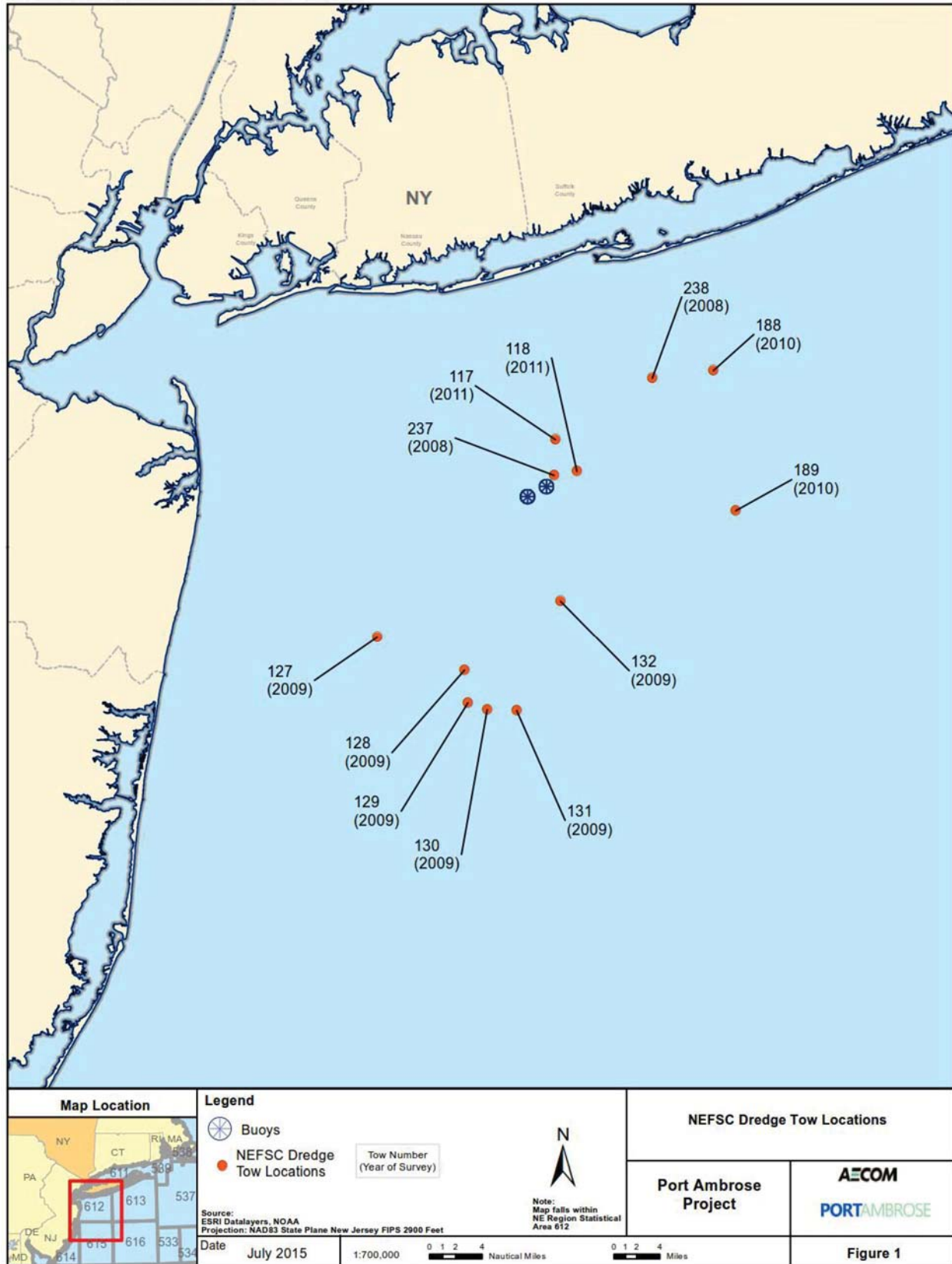


Figure 2. Dredge tows conducted by NEFSC during the sea scallop surveys from 2008 – 2011 in proximity of the Port. (Source of data NOAA / NEFSC 2008, 2009, 2010, 2011)

Table 1. NEFSC Scallop Densities for Tows in Close Proximity to the Port (Source NOAA / NEFSC 2008, 2009, 2010, 2011)

NEFSC Tow # (Year)	Tow Count (# Scallops)	Scallop Density (# per square meter)
237 (2008)	117	0.03
238 (2008)	7	0.00
127 (2009)	0	0.00
128 (2009)	37	0.01
129 (2009)	7	0.00
130 (2009)	16	0.00
131 (2009)	0	0.00
132 (2009)	416	0.10
188 (2010)	9	0.00
189 (2010)	294	0.07
117 (2011)	97	0.02
118 (2011)	21	0.00

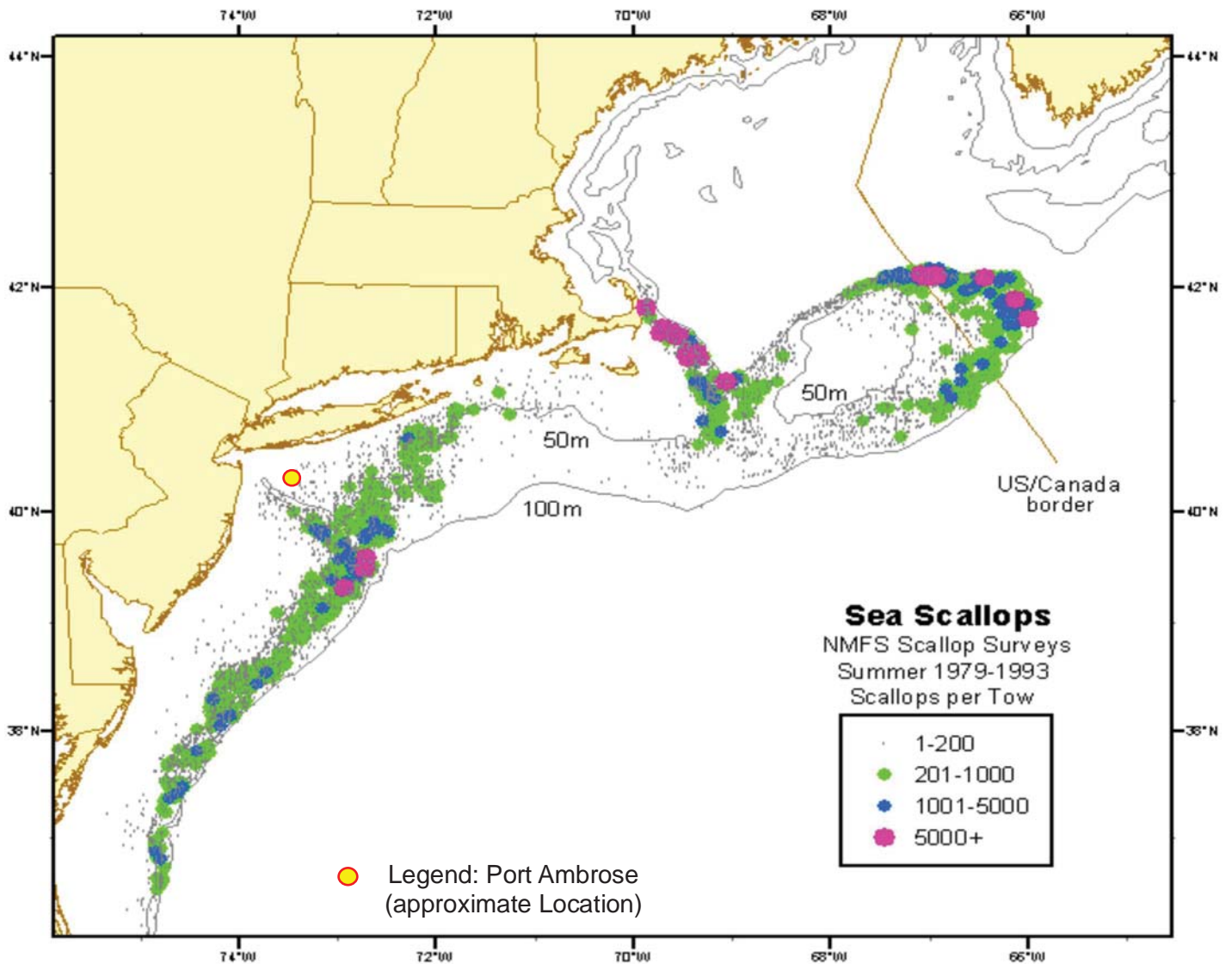


Figure 3. Distribution and abundance of sea scallops collected during NEFSC scallop surveys during summer from 1979 – 1993. (Source: Hart and Shute 2004)

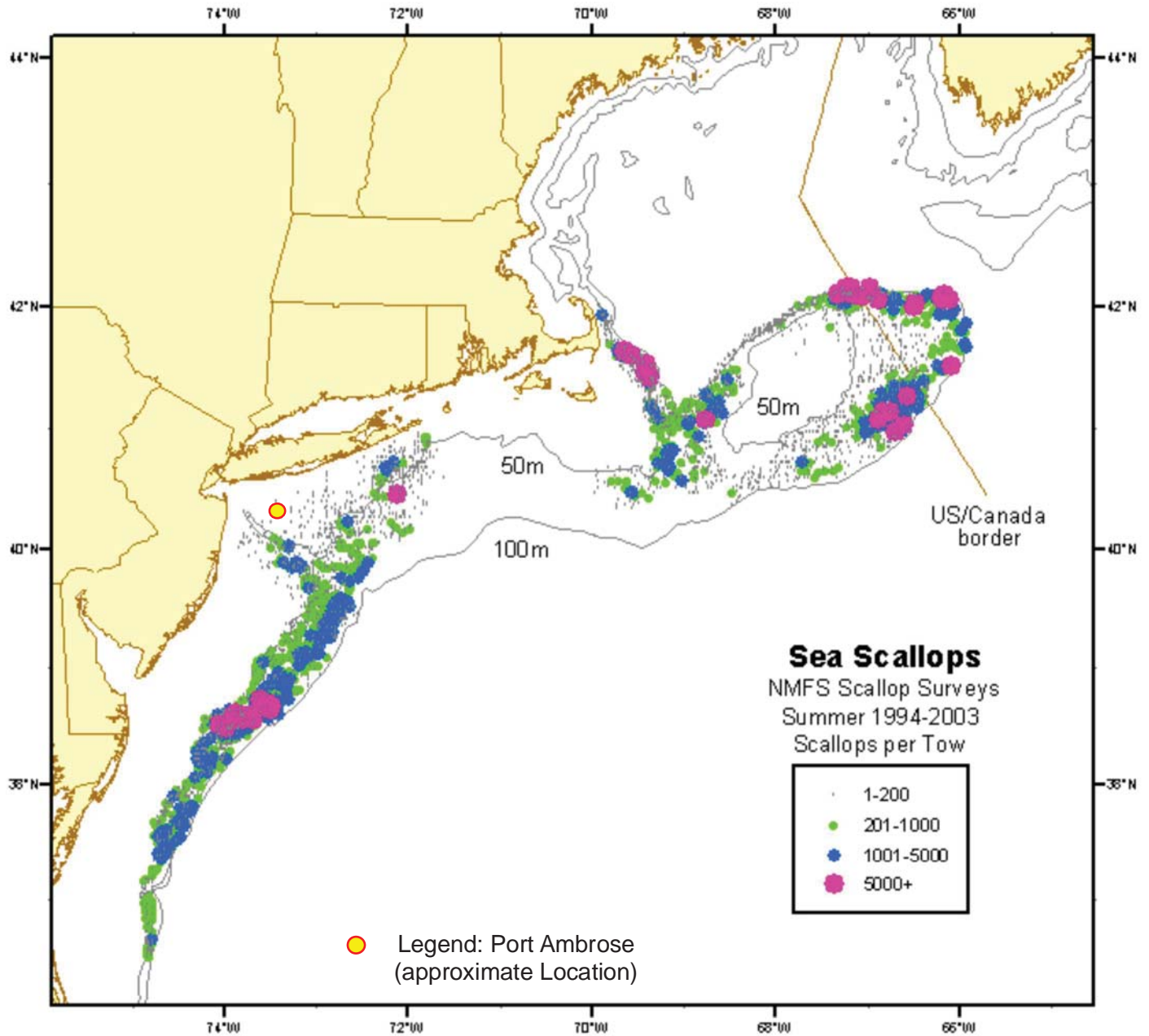


Figure 4. Distribution and abundance of sea scallops collected during NEFSC scallop surveys during summer from 1994 – 2003. (Source: Hart and Shute 2004)

Sea Scallop Data from NOAA Commercial Fisheries Database

Commercial fisheries landings data are compiled by the Fisheries Statistics Division of NOAA in several different ways (by state, port, distance from shore, species, etc.) as well as through regional statistical areas, in order to ascertain site specific data (NOAA 2011). Each statistical area spans one degree (60 square nautical miles (nmi²) and is further subdivided into four 30-minute quadrants (30 nmi²) consisting of nine 10-minute blocks (10 nmi²). Both Port STL Buoys and their proposed safety zones are located in Regional Statistical Area 612, Quadrant 2, Blocks 44 and 45, which span the border between the two Blocks (Figure 5). Figure 6 shows the gear types used and common deployment locations from 1994 – 2008 by commercial fishermen in the vicinity of the Port. The gear most commonly documented in the vicinity of the Port (in Block 44) included sea scallop dredges, but it is clear that the majority of sea scallop dredging as well as sea scallop otter trawling is done further south in Block 45.

Table 2 shows the top species (by weight) commercially caught in Blocks 44 and 45 in 2008, in comparison to the same species for all of Statistical Area 612. Only 2,000 pounds of sea scallops were caught within Block 44 representing only 0.04% of the total catch within Area 612. Although 1,109,072 pounds (or 23.3% of the total catch in Area 612) of sea scallops and shells were caught in Block 45, most of the successful scallop dredging in Block 45 was done further south in the Block. The lack of scallops within Block 44 or 45 near the Port site confirms the assessment of Ms. Hart (Personal Communication, 2015) that the area is too shallow for scallops.

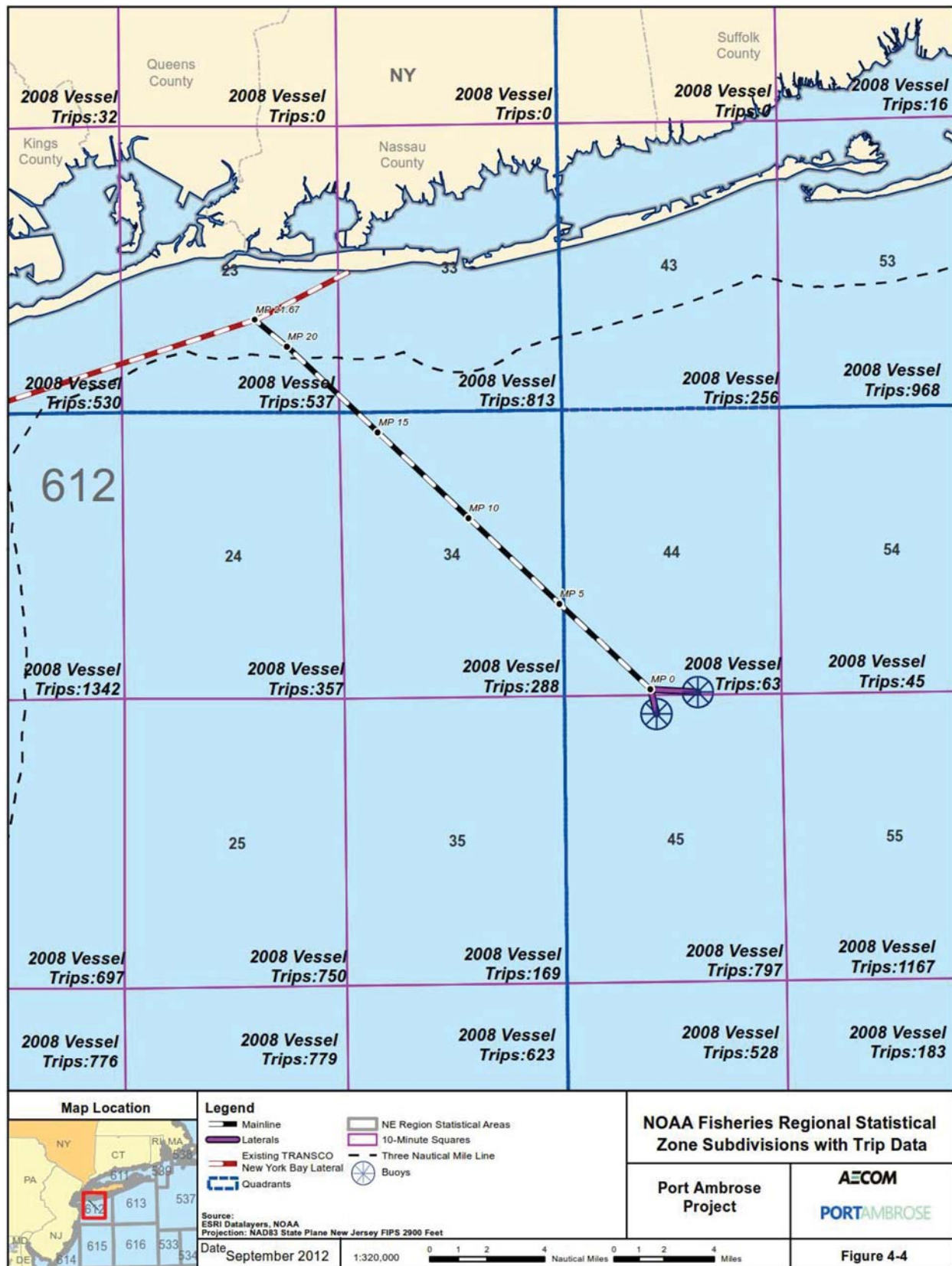


Figure 5. NOAA Fisheries regional statistical areas showing the Port facilities located in Blocks 44 and 45. (Source: Liberty Natural Gas LLC 2012b)

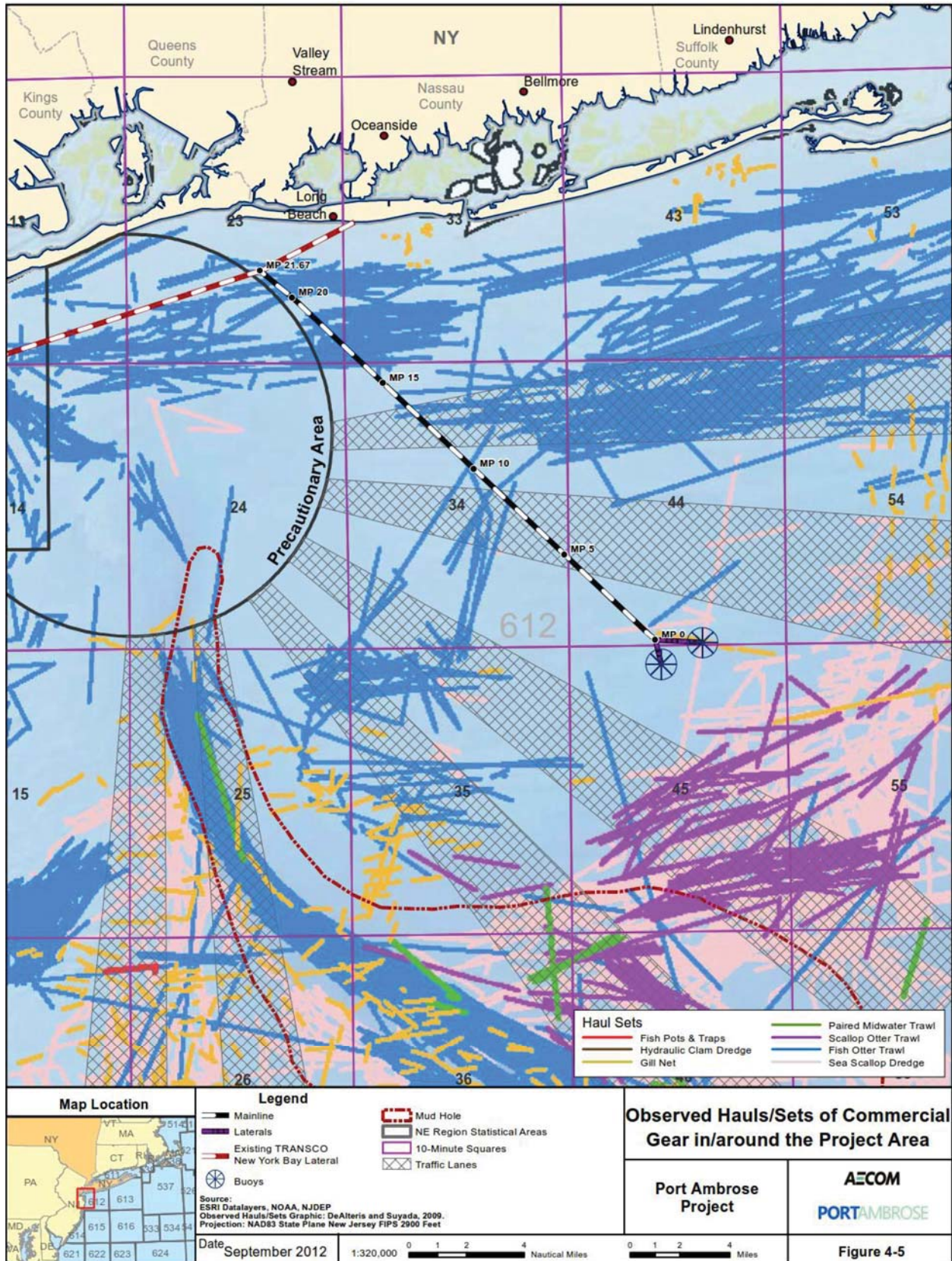


Figure 6. Commercial gear types used and common deployment locations from 1994 – 2008 in the vicinity of the proposed STL buoys. (Source: Liberty Natural Gas LLC 2012b)

Table 2. Species commercially fished from Blocks 44 and 45 with the percentage by Block of the total catch of Area 612 (Liberty Natural Gas LLC 2012b).

Species	Pounds Landed in 2008	Percent Total Catch of Area 612
Block 44		
Loligo Squid	20,040	5.2%
Winter Flounder	9,055	4.5%
Summer Flounder	4,055	0.5%
Sea Scallops	2,000	0.04%
Black Sea Bass	1,550	11.0%
Bluefish	1,490	0.5%
Atlantic Butterfish	1,090	5.5%
Goosefish	615	0.1%
Silver Hake	480	0.1%
American Plaice	300	13.3%
Total Pounds	40,675	0.1%
Block 45		
Sea Scallops and Shells	1,109,072	23.3%
Goosefish	48,575	5.6%
Summer Flounder	20,388	2.5%
Smooth/Spiny Dogfish	13,705	12.9%
Whelk	7,208	51.3%
Scup	5,772	27.1%
Unclassified Skates/Wings	3,535	0.6%
Loligo Squid	2,729	0.7%
Sculpin	388	100.0%
Winter Flounder	220	9.7%
Total Pounds	1,211,592	4.3%
Source: NOAA Fisheries 2011c.		

Citations

Hart, D.R. and A.S. Chute. 2004. Essential Fish Habitat Source Document: Sea Scallop, *Placopecten magellanicus*, Life History and Habitat Characteristics. Second Edition, U.S. Department of Commerce, NOAA, NMFS, NEFSC, Woods Hole, MA. NOAA Technical Memorandum NMFS-NE-189. 32 pages.

Liberty Natural Gas LLC 2012a. Environmental Report in Support of the Port Ambrose Deepwater Port License Application, Topic Report Four – Biological Resources, Appendix E, Video Observations of Benthic Habitats and Megafauna. 9 pp

Liberty Natural Gas LLC 2012b. Environmental Report in Support of the Port Ambrose Deepwater Port License Application, Topic Report Four – Biological Resources. 144 pp

NOAA Fisheries. 2011. Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. See *a/so* Annual Commercial Landing Statistics. Online at: http://www.st.nmfs.gov/st1/commercial/landings/annual_landings.html

NOAA / NEFSC. 2008. Resource Survey Report Sea Scallop Survey, NOAA Fisheries Service, Northeast Fisheries Science Center. 23 pp

NOAA / NEFSC. 2009. Resource Survey Report Sea Scallop Survey, NOAA Fisheries Service, Northeast Fisheries Science Center. 21 pp

NOAA / NEFSC. 2010. Resource Survey Report Sea Scallop Survey, NOAA Fisheries Service, Northeast Fisheries Science Center. 22 pp

NOAA / NEFSC. 2011. Resource Survey Report Sea Scallop Survey, NOAA Fisheries Service, Northeast Fisheries Science Center. 17 pp